

[54] DATA COMPRESSION PROCESS

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[58] Field of Search 364/900 MS File;
235/310; 340/347 DD

[56] References Cited

U.S. PATENT DOCUMENTS

3,914,586 10/1975 McIntosh 235/310

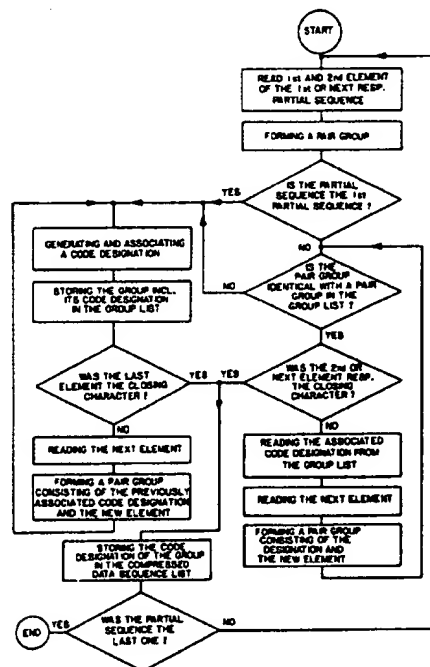
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[57] ABSTRACT

The present invention provides a method for data compression and decompression of redundant serial data. The first and second elements of the serial data are

combined to form a first pair group which is assigned a code designation and stored in a group list. Thereafter, the code designation of the previous pair group and the next element are combined to form a further pair group which is assigned to form a further code designation and this process is reiterated until a closing character is reached. For the second and subsequent sequences of serial data, the elements of the code data are combined and assigned a code designation as discussed above but with further checking to determine whether the first pair group is identical with the first pair group of a previously stored data component. If so, the code designation of the previously stored pair group is combined with the element and the data list and the subsequent incoming data is compared with the previously stored data list until the end of the identity between the data list is reached. When this occurs, a code designation of the last identical pair group in the previously stored group list is assigned a code designation which is stored in memory and the above process is repeated until the end of the serial data.

35 Claims, 1 Drawing Figure



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TITLE: Data compression process

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INVENTOR-INFORMATION:

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FIELD-OF-SEARCH: 364/9MSFile;235/310 ;340/347DD

REF-CITED:

PAT-NO	ISSUE-DATE	U.S. PATENT DOCUMENTS PATENTEE-NAME	US-CL
<u>3914586</u>	October 1975	McIntosh	235/310

ART-UNIT: 232

PRIMARY-EXAMINER: Zache; Raulfe B.

ATTY-AGENT-FIRM: Gifford, VanOphem, Sheridan, Sprinkle & Nabozny

ABSTRACT:

The present invention provides a method for data compression and decompression of redundant serial data. The first and second elements of the serial data are combined to form a first pair group which is assigned a code designation and stored in a group list. Thereafter, the code designation of the previous pair group and the next element are combined to form a further pair group which is assigned to form a further code designation and this process is reiterated until a closing character is reached. For the second and subsequent sequences of serial data, the elements of the code data are combined and assigned a code designation as discussed above but with further checking to determine whether the first pair group is identical with the first pair group of a previously stored data component. If so, the code designation of the previously stored pair group is combined with the element and the data

list and
the subsequent incoming data is compared with the previously stored
data list
until the end of the identity between the data list is reached. When
this
occurs, a code designation of the last identical pair group in the
previously
stored group list is assigned a code designation which is stored in
memory and
the above process is repeated until the end of the serial data.

35 Claims, 1 Drawing figures

DOCUMENT-IDENTIFIER: US 4491934 A
TITLE: Data compression process

----- KWIC -----

DEPR:

(1) calling up the first code designation in the compressed data sequence list;

DEPR:

(5) repeat the procedure for all subsequent code designations in the compressed data sequence list.

DEPR:

For the purposes of simplifying searching operations in the compressed data sequence list, a further aspect of the invention provides that, in a similar manner as in regard to the entries in the group list, after entry of a code designation in the compressed data sequence list, a check is made whether that code designation has already been entered at a previous location. If that is found to be the case, the previous entry is replaced by the index of the location just being considered.

DEPR:

In Table 4, in accordance with the process set forth in claim 9 hereinafter, to which reference may conveniently be made, instead of the elements, it is the respective index of the character list which is entered in a group list II as shown in Table 5. The individual steps of the process will be readily followed by referring to claim 9, in order to avoid repetition herein. The associated compressed data sequence list is once again the list set forth in Table 3. The steps of the process for decompression of the compressed sequence of serial data elements are set forth in claim 10, to which reference may conveniently be made at this point, for the sake of avoiding repetition. In group list II, it will be noted that the bracketed terms at locations 106 and 110 do not initially apply, in a similar manner to the bracketed terms 112 and 119 in group list I described above. The bracketed terms are then subsequently entered, in accordance with the procedural steps set forth in claim 11

and
claim 13 respectively, to which reference may be made.

DEPR:

Generation of the reduced group list I of Table 6 and the associated compressed list II of Table 7 can once again be readily appreciated by referring to the steps of the process set forth in claim 15, to which reference may conveniently be made for the avoidance of repetition. The same also applies in regard to the reduced group list II set forth in Table 8 below, for which the steps of the process set forth in claim 21 to which reference is now made are performed:

CLPR:

27. A process as set forth in claim 1 wherein, after entry of a code designation in the compressed data sequence list, a check is made as to whether said code designation is already entered at a preceding location and if yes, said preceding entry is replaced by the index of the entry which has just been made.

CLPV:

(1) calling up the first code designation in the compressed data sequence list;

CLPV:

(5) repeating the procedure for all subsequent code designations in the compressed data sequence list.

CLPV:

(7) calling up the first code designation in the compressed data sequence list;

CLPV:

(11) repeating the procedure for all subsequent code designations in the compressed data sequence list.

DOCUMENT-IDENTIFIER: US 4491934 A
TITLE: Data compression process

----- KWIC -----

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(1) calling up the first code designation in the compressed data sequence list;

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(5) repeat the procedure for all subsequent code designations in the compressed data sequence list.

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In Table 4, in accordance with the process set forth in claim 9 hereinafter, to which reference may conveniently be made, instead of the elements, it is the respective index of the character list which is entered in a group list II as shown in Table 5. The individual steps of the process will be readily followed by referring to claim 9, in order to avoid repetition herein. The associated compressed data sequence list is once again the list set forth in Table 3. The steps of the process for decompression of the compressed sequence of serial data elements are set forth in claim 10, to which reference may conveniently be made at this point, for the sake of avoiding repetition. In group list II, it will be noted that the bracketed terms at locations 106 and 110 do not initially apply, in a similar manner to the bracketed terms 112 and 119 in group list I described above. The bracketed terms are then subsequently entered, in accordance with the procedural steps set forth in claim 11 and

claim 13 respectively, to which reference may be made.

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Generation of the reduced group list I of Table 6 and the associated compressed list II of Table 7 can once again be readily appreciated by referring to the steps of the process set forth in claim 15, to which reference may conveniently be made for the avoidance of repetition. The same also applies in regard to the reduced group list II set forth in Table 8 below, for which the steps of the process set forth in claim 21 to which reference is now made are performed:

CLPR:

27. A process as set forth in claim 1 wherein, after entry of a code designation in the compressed data sequence list, a check is made as to whether said code designation is already entered at a preceding location and if yes, said preceding entry is replaced by the index of the entry which has just been made.

CLPV:

(1) calling up the first code designation in the compressed data sequence list;

CLPV:

(5) repeating the procedure for all subsequent code designations in the compressed data sequence list.

CLPV:

(7) calling up the first code designation in the compressed data sequence list;

CLPV:

(11) repeating the procedure for all subsequent code designations in the compressed data sequence list.